

# Lesson 1.7 Extra Practice

STUDENT BOOK PAGES 52–60

1. The point  $(2, 5)$  is on the graph of  $y = f(x)$ . State the coordinates of the image of this point on each graph.

a)  $y = f(-x)$

b)  $y = f\left(\frac{3}{2}x\right)$

c)  $y = f\left(-\frac{1}{2}x\right)$

d)  $y = f(-5x)$

2. Sketch graphs of each pair of transformed functions, on the same set of axes. Describe the transformations in words and note any invariant points.

a)  $y = (3x)^2, y = (4x)^2$

b)  $y = \sqrt{-5x}, y = \sqrt{-7x}$

c)  $y = |2x|, y = |5x|$

3. Repeat question 2 for each pair of transformed functions.

a)  $y = \left(-\frac{2}{3}x\right)^2, y = \left(-\frac{3}{4}x\right)^2$

b)  $y = \sqrt{-\frac{3}{5}x}, y = \sqrt{-\frac{3}{7}x}$

c)  $y = \left|-\frac{5}{7}x\right|, y = \left|-\frac{5}{8}x\right|$

4. In each graph, one of the parent functions

$f(x) = x^2, f(x) = \sqrt{x}, f(x) = \frac{1}{x}$ , and  $f(x) = |x|$

has undergone a transformation of the form  $f(kx)$ .

Determine the equations of the transformed functions graphed in gray.

